

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HITACHI LTD

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(72)Inventor : HAKODA HIDETAKA

KIKUCHI MASAHIITO

TAKARAGI MASAHIITO

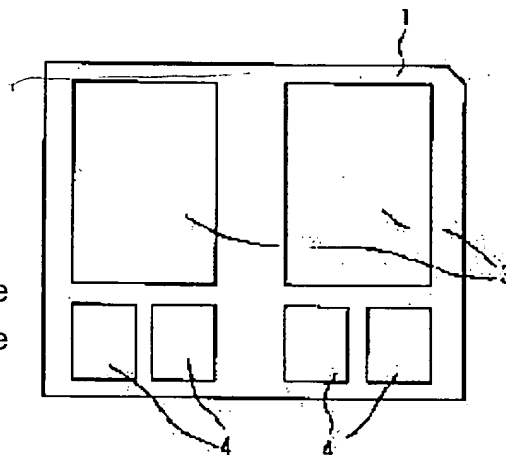
(54) MANUFACTURE OF LIQUID CRYSTAL DISPLAY DEVICE PANEL

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce producing cost by forming the panel patterns of varying sized plural liquid crystal display device panels on a mother glass base plate and then cutting the glass.

SOLUTION: First, two 11.3 inch TET panel patterns 3 and four small TFT panel patterns 4 are formed on a mother glass base plate 1. Then, the glass 1 is cut and two 11.3 inch TET panels and four small TFT panels are obtained. During the process, no space is wasted on the plate 1, many panel patterns are formed on the plate 1 and the production cost of TFT panels is reduced.

Moreover, since the conventional mother glass base plate 1 is used, the need to newly install the production device capable of handling mother glass base plates different in size is eliminated.



LEGAL STATUS

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* NOTICES *

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the manufacture approach of panels for liquid crystal displays, such as a liquid crystal display of an active-matrix method, of having TFT (Thin Film Transistor; thin film transistor).

[0002]

[Description of the Prior Art] The schematic diagram showing the liquid crystal display of the active-matrix method with which drawing 2 has TFT, and drawing 3 are the sectional views showing some liquid crystal displays shown in drawing 2. As shown in drawing, liquid crystal (not shown) is enclosed between the TFT panel 11 and the filter panel 12 which has a color filter. And the gate electrode 22 connected with the scan signal line (not shown) is formed in the glass substrate 21 of the TFT panel 11. An oxide film on anode 23 is formed on the gate electrode 22, and the insulator layer 24 used as gate dielectric film is formed on an oxide film on anode 23. The transparence pixel electrode 25 is formed on an insulator layer 24, and the i-type semiconductor layer 26 and n+ mold semi-conductor layer 27 are formed on an insulator layer 24. The source electrode 30 which consists of chromium film 28 and aluminum film 29 has connected n+ mold semi-conductor layer 27 and the transparence pixel electrode 25. The drain electrode 33 which consists of chromium film 31 and aluminum film 32 has connected n+ mold semi-conductor layer 27 and the video-signal line (not shown), and TFT34 consists of the gate electrode 22, the i-type semiconductor layer 26, an n+ mold semi-conductor layer 27, a source electrode 30, and drain electrode 33 grade. Moreover, a protective coat 35 is formed on the transparence pixel electrode 25 and TFT34, the orientation film 36 is formed on a protective coat 35, and it is constituted by a scan signal line, a video-signal line, the transparence pixel electrode 25, TFT34, and protective coat 35 grade, the parts 2, i.e., the panel pattern, other than glass substrate 21 of the TFT panel 11.

[0003] And after a dimension in every direction forms the panel pattern 2 of four 10.4 inches TFT panels 11 on the mother glass substrate 1 which are 370mm and 470mm as shown in drawing 4 in order to manufacture the TFT panel 11 of a liquid crystal display as conventionally shown in drawing 2 and drawing 3, the mother glass substrate 1 is cut to four.

[0004]

[Problem(s) to be Solved by the Invention] however, as shown in drawing 5, when the panel pattern 3 of the 11.3 inches TFT panel is formed in the mother glass substrate 1 of the same dimension as having formed the panel pattern 2 of the 10.4 inches TFT panel 11 Only two panel patterns 3 cannot be formed in the mother glass substrate 1. A useless tooth space is generated in the mother glass substrate 1, and since the number of the panel patterns which can be formed in the mother glass substrate 1 becomes half, the manufacturing cost of the 11.3 inches TFT panel becomes high.

[0005] Here, although it is possible to enlarge the dimension of a mother glass substrate according to the dimension of the 11.3 inches TFT panel, since the manufacturing installation of the TFT panel which can deal with a mother glass substrate in this case with a big dimension must newly be prepared, it is necessary to carry out immense plant-and-equipment investment.

[0006] It aims at offering the manufacture approach of the panel for liquid crystal displays that were made in order that this invention might solve an above-mentioned technical problem, and the manufacturing cost of the panel for liquid crystal displays becomes cheap.

[0007]

[Means for Solving the Problem] In order to attain this purpose, after forming the panel pattern of two or more panels for liquid crystal displays by which dimensions differ in a mother glass substrate in this invention, the above-mentioned mother glass substrate is cut.

[0008]

[Embodiment of the Invention] In the manufacture approach of the panel for liquid crystal displays concerning this invention, as first shown in drawing 1, the panel pattern 3 of two 11.3 inches TFT panels and the panel pattern 4 of four small TFT panels are formed in the mother glass substrate 1. Next, the mother glass substrate 1 is cut and two TFT panels of 11.3 inches and four small TFT panels are obtained.

[0009] In the manufacture approach of this panel for liquid crystal displays, since a useless tooth space is not generated in the mother glass substrate 1 and many panel patterns can be formed in the mother glass substrate 1, the manufacturing cost of the TFT panel becomes cheap. Moreover, in the mother glass substrate 1, since the mother glass substrate 1 which was being used from the former can be used, since it is not necessary to newly prepare the manufacturing installation of the TFT panel which can deal with the mother glass substrate with which dimensions differ, it is not necessary to carry out immense plant-and-equipment investment.

[0010] In addition, in the gestalt of the above-mentioned implementation, although the case where the panel for liquid crystal displays was the TFT panel was explained, it is clear that this invention is applicable also in the case of the panel for liquid crystal displays by which the panel for liquid crystal displays constitutes the liquid crystal display of a simple matrix method.

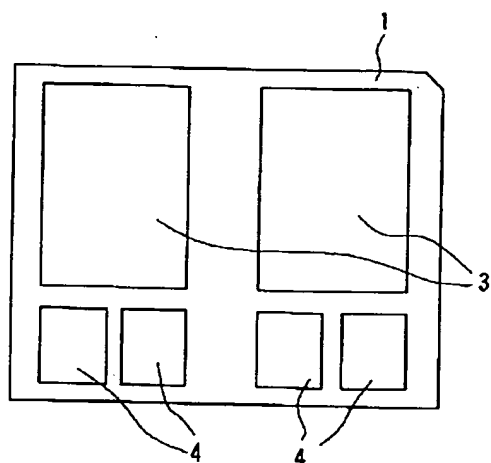
[0011]

[Effect of the Invention] Since many panel patterns can be formed in a mother glass substrate in the manufacture approach of the panel for liquid crystal displays concerning this invention as explained above, the manufacturing cost of the panel for liquid crystal displays becomes cheap.

[Translation done.]

Drawing selection 

図 1



1...マザーガラス基板

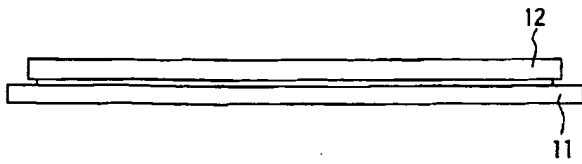
3...パネルボタン

4...パネルボタン

[Translation done.]

Drawing selection ☐

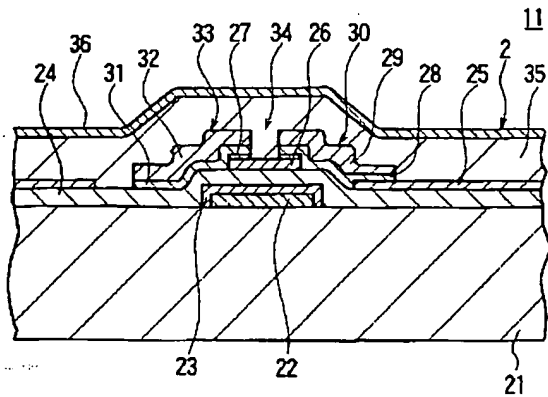
2



[Translation done.]

Drawing selection ☐ drawing 3 ☒

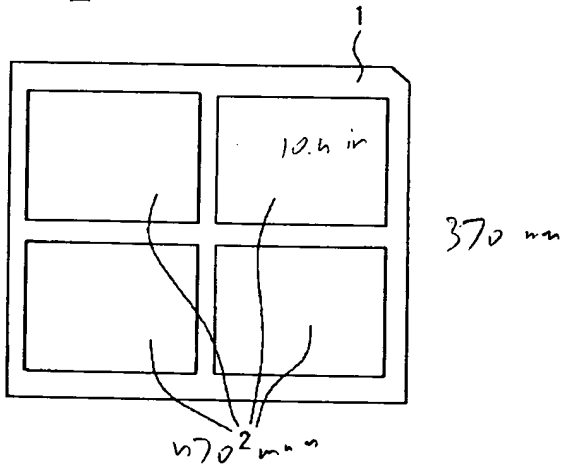
図 3



[Translation done.]

Drawing selection 

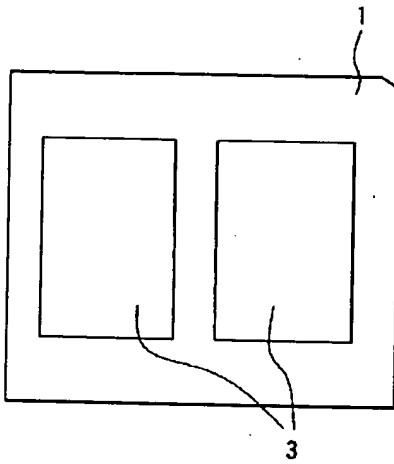
4



[Translation done.]

$$1 \text{ mm} = 0.04 \text{ in}$$

18.8 in

Drawing selection ☒☒ 5

[Translation done.]